

Benchmark Case Study - Hawaii

(present management system)

Conservation Effects WorksheetCropland - Papaya

(land use and crop)

Resource Setting: Hilo, Hawaii

Soils - rMAD

Elevation - 200 ft

Rainfall - 100 inches per year

Present Management System:

Field is cleared of brush, usually with a bulldozer. Lines are cut with the ripper attachment ever 8 feet. A handful of seeds are placed directly in the field at 6 feet spacing. A month after germination only 2 or 3 of the strongest seedlings is kept. Upon flowering, only 1 hermaphroditic tree is kept per planting hole. About 40 pounds of a complete fertilizer are applied at planting time, 75 or more pounds during the third and fifth month, and 300 pounds or more per month thereafter until the tree is about 3 years old. Weeds are controlled with Roundup. The trees bear marketable fruits when they are about a year old. The fruits are hand harvested. The next year they will bear about 38,000 pounds per acre. The third and final year production drops to about 25,000 pounds per acre. The crop is then abandoned primarily due to the height of the trees. The field will remain fallow for 3 to 4 years to help control nematodes and phytophthora.

Resource Problems Before Treatment:

Potential leaching of nutrients/pesticides into groundwater.

| ACTIONS (Kinds, Amounts, Timing) | EFFECTS (Effects of Continuing Bench System) |
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| <p>Herbicide with Roundup, 1gal/100gals = 1 acre coverage. Apply 2 times before plant, 6 months after plant and then every 3 months thereafter.</p> <p>Fungicide - Dithana M45, 2.5 lbs./ac every three weeks.</p> <p>Miticide - Verdex, 6 oz./ac 2 times per year.</p> <p>Fertilizer</p> <ul style="list-style-type: none"> • 1st year - 2,000 lbs./ac 14-14-14 (granular) • 2nd year - 1,800 lbs./ac 14-14-14 and 16-5-16 alternated. | <p>No adverse effects if 10 inches of rainfall are uniformly spread over 1 month. Either, heavy rainfall or uneven distribution may cause leaching of nutrients/pesticides.</p> |
| <p>Comments:</p> | |